

**DEPARTMENT OF GEOSCIENCES  
OREGON STATE UNIVERSITY**

**DOCTOR OF PHILOSOPHY (Ph.D.) DEGREE PROGRAM IN GEOLOGY**

**General Requirements**

This degree is granted primarily for creative and scholarly achievements. It must satisfy the requirements of the Graduate School, as given in the Graduate Catalog and Schedule of Classes, and the Department of Geosciences Geology Program. Although there is no rigid credit requirement, the candidate must have the equivalent of at least three years of full-time graduate work beyond the BS/BA degree and a minimum of one full-time academic year devoted to the thesis. Students who will have had all their undergraduate and graduate education at OSU must obtain approval from the Graduate School for admission to the doctoral program.

**Responsibility for Completing Graduate Program**

The student should assume responsibility for their graduate program, follow department and university requirements, meet all deadlines, and initiate all steps involved in obtaining the degree; meet regularly with the major professor to discuss progress or difficulties in research, course work or other matters; and, if experiencing serious difficulties with the major professor, discuss the matter with the Director of the Geology Program or the Chairman of the Geosciences Department.

**Residence**

The student must have been enrolled for three out of four consecutive quarters at OSU, and a minimum of 36 credit hours (ch) of graduate work must have been completed at OSU. The required 36 ch of graduate work may include thesis hours, and need not have been completed in three out of four consecutive quarters. Fulfillment of the residence requirements will be determined by the Graduate School.

**Time Limit**

There is none as such but the final oral examination must be taken within five years after the preliminary oral examination (see below). If more than five years have elapsed, the candidate will be required to take another preliminary oral examination.

**Language**

There is no foreign language requirement for advancement to candidacy for the Ph.D. degree in Geology.

**Credit Hours**

The Ph.D. program must fulfill the requirements of both the Graduate School (residence) and the department, and it must represent a level of work that is consistent with the degree.

- The minimum residence requirement of having been enrolled at OSU for three out of four consecutive quarters.
- The minimum credit-hour requirement of having completed 36 ch of graduate level work at OSU, excluding thesis hours.
- The minimum of one full-time academic year (25 to 45 ch; average 36 ch) devoted to the thesis (GEO 603).
- Three years of full-time course work (12 ch/quarter) at OSU or elsewhere, beyond the BS/BA degree, and thus a minimum of 108 credit hours (3 yr. x 36 ch/yr.), including thesis hours.
- A maximum of 15 ch for blanket number courses (exclusive of thesis) and a maximum of 45 ch for thesis hours (GEO 603), but blanket and thesis credit hours may exceed 15 and 45 ch, respectively, provided that they are in excess of the minimum 108 ch total program hours.
- Transfer courses must be at the graduate level and have a letter grade of B or better (they cannot be ungraded courses such as S-U or P-N). They may be used only once, either for the major or for the minor, but not for both.

## **Course Work**

The student must maintain a 3.00 or higher GPA in all graded graduate-level course work.

**A geology summer field camp experience of at least 9 credit hours must be part of each geology graduate student's academic record. If this was not completed prior to the PhD, it must be completed during the PhD.**

One graduate course in each of the following areas (satisfactory completion of these courses is taken to indicate an adequate level of training – students with deficient undergraduate backgrounds should be advised to take appropriate preparatory work):

### Petrology/Geochemistry/Ore Deposits

- GEO 512 Igneous Petrology (4)
- GEO 527 Volcanology (4)
- GEO 530 Geochemistry (3)
- GEO 540 Economic Geology (4)
- GEO 597 Field Mapping of Ore Deposits (3)
- GEO 633 Geochronology and Isotope Geology (3)
- GEO 646 Magmatic and Hydrothermal Ore Deposits (4)

### Structural Geology/Geophysics/Tectonics

- GEO 554 Advanced Structural Geology (3)
- GEO 556 Western Cordillerean Tectonics (3)
- GEO 558 Plate Tectonics of Continental Collision (3)
- GEO 561 Geology of Earthquakes (3)
- GEO 563 Geophysics and Tectonics (4)
- GEO 564 Seismic Reflection Interpretation (4)
- GEO 536 Advanced Field Methods in Active Tectonics (3)
- GEO 537 Tectonic Geomorphology (3)

### Stratigraphy/Surficial Geology/Hydrogeology

- GEO 514 Groundwater Hydraulics (3)
- GEO 532 Applied Geomorphology (3)
- GEO 533 Coastal Geomorphology (3)
- GEO 548 Field Research in Geomorphology and Landscape Ecology (3)
- GEO 570 Stratigraphy and Sedimentology (4)
- GEO 581 Glacial Geology (4)
- GEO 582 Geomorphology of Forests and Streams (3)
- GEO 586 Quaternary Paleoclimatology (3)
- GEO 588 Quaternary Stratigraphy of North America (3)
- GEO 589 Role of Fluids in Geologic Processes (3)

## **Doctoral Program**

The student's doctoral study program is initially developed in collaboration with the major professor, and is officially formulated and approved at a formal meeting of the doctoral committee, scheduled in advance with the Graduate School. Thesis committees shall consist of 4 members and one representative of the graduate council; all must be members of the Graduate Faculty. Adjunct members from other universities or appropriate organizations may also serve if approved by the thesis committee and the Graduate School. At least 2 members must be regular Geosciences faculty, as distinguished from courtesy faculty by the listing which appears in the OSU Bulletin. There must be at least one Geology Program faculty member on every committee.

The major professor assumes principle responsibility for directing research activities. When the major professor is courtesy faculty, a member of the Geosciences regular faculty must serve as chairperson and co-chairman of the thesis committee and both must sign the approved thesis. Before graduate program forms (which must be signed by the department chairperson) are submitted to the Graduate School, the Director of the Geology Program may review thesis committee membership and, in consultation with the Geology Program graduate committee, call for changes in composition of the thesis committee.

First year graduate students are required to enroll in GEO 507 (Seminar: Geology Colloquium), 1 credit, fall term, plus 2 other credits of GEO 507 (Seminar: Geology Colloquium) during their time in residence. Students are also required to take GEO 518 (Geoscience Communication, 3 credits, winter term).

If the student declares a formal minor or integrated minor in an area of study outside the Department of Geosciences Geology Program (such as Chemistry, Oceanography, etc), then at least one member of the committee must be from that department. In addition, the minor or integrated minor requires 18 or 15 ch, respectively, of graduate-level study in that department.

Students holding the M.S. degree must file their doctoral programs within one calendar year of entrance to the program, whereas those going directly from the BS/BA to Ph.D. degree must file their programs before the end of their fifth term of study. The doctoral program committee meeting must be scheduled at the Graduate School one week in advance. Thesis proposals of Ph.D. candidates are developed in collaboration with the major professor and members of the doctoral committee. The thesis proposal should be given to each committee members in advance of the meeting, revised so that it is acceptable, and signed at the time of the meeting (an acceptable proposal is a prerequisite for approval of the graduate program). Two copies of the approved proposal are given to the Director of the Geology Program, who places one in the student file and circulates the second to the faculty. Upon approval of the program by the doctoral committee, department chair, and Dean of the Graduate School, it is the obligation of the student to complete the requirements as formulated.

### **Preliminary Examinations**

Students following the doctoral program must pass a two-stage sequence of comprehensive written and oral preliminary examinations before the end of the third year after entering the Ph.D. program. The preliminary examinations are intended to determine overall knowledge and understanding of the geological sciences and capability for research.

The written preliminary examination is of three hours duration in each of two primary fields and of 90-minute duration in each of two secondary fields and taken from the following:

- Geochemistry
- Geomorphology
- Geophysics
- Hydrogeology
- Igneous Petrology
- Paleoclimatology
- Mineral deposits
- Quaternary geology
- Sedimentary petrology
- Sedimentary geology/stratigraphy
- Structural geology
- Tectonics
- Volcanology

The student must provide a written notice of intent to take the written examination to the Director of the Geology Program. Notice should occur not less than four weeks prior to the exam date and must specify the primary and secondary fields of examination, as agreed upon with the student's major professor. Written examination questions can be prepared by any member of the Geology Program and/or the student's committee. The selection of the questioners is made by the Director of the Geology Program, who will then contact questioners, administer the exam, and make the results known to the student, the questioners, and the committee members.

The oral preliminary examination may be held after successful completion of the preliminary written examination. Timing of the oral examination requires agreement by the committee members and must be recorded at the Graduate School one week in advance by the student. This examination is conducted by members of the doctoral committee and is of at least two hours duration. Advancement to candidacy is contingent on passing these preliminary examinations.

### **Thesis Proposal**

The candidate for the PhD degree must prepare a thesis proposal written according to the conventions of geologic literature. See "**Geology guidelines for thesis research proposal.**" During the second term of residence, each student should register for 2 credits of Reading and Conference (GEO 605) with the major professor and prepare a draft of the thesis proposal.

Two copies of the final draft, **approved and signed** by all three committee members, must be submitted to the Director of the Geology Program who places one in the student file and circulates the second to the faculty by the sixth week of the student's third term of residence (ordinarily the date will be around mid-May for students entering fall term). The candidate should retain the original draft of the proposal and give copies to each of the committee members.

### **Thesis Proposal Presentation**

The candidate for the PhD degree present their thesis topic/proposal to the department in a brief (usually 12-15 minutes) professional seminar during the month of May during each of their first and second year. This is usually accomplished at "GEO Day", a 1-day conference for Geosciences graduate students held annually in mid-May.

### **Review Progress**

The Program Director will review the progress of each student at the end of the first year of residence, ensuring that all PhD students are making good progress. The Geology faculty will review each student's progress between November 15 and December 15 of each year. If a student is not making satisfactory progress, the faculty, in consultation with the student's major professor and committee, will suggest ways and deadlines for the student to get back on track. Continued failure to make progress will result in loss of assistantship and ultimately, dismissal.

### **Thesis**

All candidates for the Ph.D. degree must submit a thesis embodying the results of research and giving evidence of originality and ability in independent investigation. The thesis must be a real contribution to knowledge, based on the candidate's own investigation. It must show a mastery of the literature of the subject and be written in creditable literary form. Information concerning the style and format of the thesis may be obtained from the booklet "**Preparing a thesis or dissertation at Oregon State University: a graduate student's guide**" that is available from the OSU Book Store or Grad School website ([http://oregonstate.edu/dept/grad\\_school/](http://oregonstate.edu/dept/grad_school/)). A copy of the pretext pages must be submitted to the Graduate School at least two weeks prior to the final examination. Complete copies of the final draft are distributed by the candidate to the other members of the doctoral thesis committee.

### **Final Examination**

At least one full academic term must have elapsed between completion of the preliminary examination and the final examination (often referred to as thesis defense). The candidate must schedule the final examination at least two weeks in advance with the Graduate School after having previously arranged the time, date and place with all members of the doctoral committee. To reiterate, the final examination must be taken not less than one full academic term, and not more than five years after the preliminary examinations. The final examination is normally two hours in length, and consists of an oral presentation of the thesis research that is followed by a question period in which the candidate may be examined in depth with respect to knowledge in his or her field of specialization. The examination is conducted by the doctoral thesis committee and is open to all faculty, students, and the public. However, at the discretion of the committee, a part of the question period may be closed to all except those appropriate to the evaluation of the candidate. The candidate, upon successful completion of the final examination, must within six weeks present to the Graduate School two unbound and complete final copies of the thesis (revised if necessary) and one extra copy of the abstract. All Ph.D. Candidates at this time must pay a fee for the microfilming of the entire thesis by University Microfilms and publication of the abstract (not more than 350 words, otherwise it must be re-written) in "**Dissertation Abstracts**". In addition, the candidate must also provide a complete final copy of the thesis to the thesis advisor and one complete bound and one unbound copy to the Geosciences Department office.

**Note**

Additional details relevant to these conventions, procedures, forms, and important deadlines may be obtained from the Graduate School (541-737-4881), [http://oregonstate.edu/dept/grad\\_school/](http://oregonstate.edu/dept/grad_school/).

**Continuous Graduate Enrollment Policy**

All graduate students in graduate degree and certificate programs must register continuously for a minimum of 3 graduate credits and pay fees, regardless of the student's location, if they will be using any university or department resources (e.g., facilities, equipment, computing and library services, holding meetings or exams, or using faculty or staff time) until their degree or certificate is granted or until their status as a credential seeking graduate student is terminated. A graduate student intending to resume active graduate student status following interruption of his/her study program must have applied for a Leave of Absence, and then submit an Intent to Resume Graduate Status form at least 15 working days prior to the first day of the term involved to avoid being charged for 3 credits for each term of unauthorized break in registration. Application for a leave of absence is not required for absence during summer term.

See the entire Executive Summary on Continuous Graduate Enrollment Policy on the Graduate School website ([http://oregonstate.edu/dept/grad\\_school/](http://oregonstate.edu/dept/grad_school/)) or find it by searching the OSU website for "continuous enrollment".

**Collective Bargaining**

The University has a collective bargaining agreement with the Coalition of Graduate Employees, AFT, AFL-CIO. Some graduate assistants may be members of a bargaining unit. For these graduate assistants, terms and conditions of employment for service not required as part of their degree requirements are prescribed in a collective bargaining agreement.

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## Schedule for Ph.D. program

| Activity   | When  |
|--|---|
| 1. Initial advising, preliminary course program  | 1 <sup>st</sup> week of first term  |
| 2. Enroll in GEO 507 (Seminar: Geology Colloquium) and GEO 518 (Geoscience Communication)  | 1 <sup>st</sup> -2 <sup>nd</sup> term   |
| 3. Choose dissertation advisor   | 1 <sup>st</sup> -2 <sup>nd</sup> term   |
| 4. Choose dissertation committee; meet with committee to discuss program and dissertation proposal; file program with Graduate School  | 2 <sup>nd</sup> – 3 <sup>rd</sup> term  |
| 5. Prepare dissertation proposal; circulate approved and signed copy to Geology faculty; provide the Geology Program Director and each committee member with signed copies   | 2 <sup>nd</sup> -5 <sup>th</sup> term   |
| 6. Present preliminary thesis proposal at Geosciences Graduate Student Colloquium (“GEO Day”)  | Mid-May, 1st year   |
| 7. Complete full proposal prior to taking written exam.  | before end of 5 <sup>th</sup> term  |
| 8. Arrange with Geology Program Director to take written preliminary exam  | after #5  |
| 9. Arrange with dissertation advisor and Graduate School to take oral preliminary exam   | after #8  |
| 10. Present final thesis proposal & progress at Geosciences Graduate Student Colloquium (“GEO Day”)  | Mid-May, 2nd year   |
| 11. Advancement to Candidacy (upon passing oral preliminary exam: a department deadline)   | Before end of third year after entry  |
| 12. Complete required courses  | 4 <sup>th</sup> to 9 <sup>th</sup> term   |
| 13. Submit drafts of dissertation to advisor   | At least one term before final oral exam  |
| 14. Complete final draft, convey copies of pretext pages to Grad School. Provide complete draft to each committee member two weeks in advance of exam; Schedule and pass final oral exam   | 10 <sup>th</sup> to 15 <sup>th</sup> term; at least 1 term after advancement to candidacy |
| 15. Convey two final copies of dissertation to Graduate School after final oral exam (thesis defense), a bound copy to your major professor, and one unbound copy and one bound copy to the Geosciences Department office. (Check with the office staff for binding requirements.) | Within 6 weeks after oral exam  |

\* this schedule assumes being enrolled for three terms each year

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